

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004157**Date Inspected:** 11-Oct-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** Pan Han**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower, Deviation and Jacking Saddles**Summary of Items Observed:**

On this date OSM Quality Assurance (QA) Representative Daniel L. Reyes was present during the welding of the structural steel components regarding the West Deviation Saddles relative to this project. The following was observed:

**Fabrication Shop # 4**

At the start of the shift the QA inspector observed the scheduled Partial Joint Penetration (PJP) groove welding of the structural steel grillage to the casting, QC inspection and the verification of the Alternating Current (AC) welding parameters on the structural steel plate components for the West Deviation Saddle identified as W2E1. The welding was performed on the rib to rib connections identified as E1Y-4U-1 and E1Y-4U-2. The welding was performed by Japan Steel Works, Ltd. (JSW) welding personnel Kouza Kobayashi, ID 08-5023. The welding process utilized the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) SJ-3011-6 which was also used by the QC inspector as a reference during verification of the welding parameters. The welding was also performed utilizing the Distortion Control Plan, identified as Document Number SJ-3109 Revision 4 Attachments 7 and 8 Step 1. The welding was performed in the horizontal (2G) position with the work in the vertical plane and the axis of the weld horizontal and the vertical (3G) position with the work in the vertical plane with the weld axis vertical.

The consumable utilized by the welding personnel appeared to be a Hobart Brothers Product and the trade name was identified as Hoballoy 9018-M which appeared to comply with the AWS Specification A5.5 and the AWS Classification E9018-M-H4R. The size of the electrodes utilized was 4.0 and 4.8 mm in diameter.

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The Quality Control (QC) inspection was performed by Intertek Testing Services (ITS) personnel Pan Han who performed the verification the preheat temperatures, welding parameters and the in process weld inspection during this shift. The welding parameters were verified utilizing a Hioki 3109 Clamp Meter, Model RMS and the surfaces temperatures were verified utilizing an Anritsu HA 100E digital surface thermometer during the QC verification.

The QA inspector also observed Nikko Testing Service (NIS) QC technician, Masahiro Sato perform the Magnetic Particle Testing (MPT) on the root pass of the PJP groove weld identified as E1Y-4U-1 and E1Y-4U-2. The testing was performed utilizing an AC Yoke, Type A-6 testing unit which appeared to be manufactured by Eishin Kagaku Co., Ltd. The MPT was performed on 100% of the root pass and appeared to comply with the MPT procedure identified as SF-MT-01. There appeared to be no indications noted by the QC technician during the testing of the root pass.

Later in the shift this QA inspector observed, at random intervals, the QC inspector performing QC verification of the welding parameters, the minimum preheat and maximum interpass temperatures.

The QA inspector's observations were performed at random intervals during the shift. The QA inspector noted that it appeared the approved and latest revised WPS's were posted at the welding station and that each approved welder was entered in the latest revised Welding Personnel Log issued by Japan Steel Works, Ltd. The welding parameters, preheat and interpass temperatures were verified by the QA inspector utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempilstik temperature indicators for the surface temperatures. The filler metal utilized by the JSW welding personnel was also verified. The QC inspector ITS personnel, Pan Han appeared to perform the visual weld examinations, monitoring of the welding and the verification of the welding parameters in accordance with the contract documents.

See Weld Joints in Progress Inspected on page 3 of this report in regards to QA observation of the welding parameters recorded during this shift on this date.

The following digital photograph illustrates the observations of the activities performed on this date.



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Item	Weld Identification	Applicable WPS	CWI Name	Amperage	Voltage	TravelSpeed	Preheat Temp	Remarks
1	E1Y-4U-1	SJ-3001-6	Pan Han	192 AC	22 AC	115mm/m	194 Degrees C.	K. Kobayashi

### Summary of Conversations:

There were no pertinent conversations relative to the project on this date.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Reyes,Danny	Quality Assurance Inspector
<b>Reviewed By:</b>	Lanz,Joe	QA Reviewer

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